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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,633

09/21/2006

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Q96939

1928

23373 7590 10/14/2009
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EXAMINER

GILLESPIE, BENJAMIN

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,633	Applicant(s) YAMANE ET AL.	
	Examiner BENJAMIN J. GILLESPIE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/5/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The current action contains a new ground of rejection, however, said new grounds is necessitated by applicants' amendment filed 6/12/2009 – specifically claim 1 now contains the limitations of claim 2 – and claims 3-9 were not previously considered with the limitations of claim 2.
2. Thus it is proper to make the instant action FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Obviousness Rejection I

3. **Claims 1 and 4-9** are rejected under 35 U.S.C. 35 U.S.C. 103(a) as being unpatentable over Daichou *et alli* (US 2004/0085772 A1) in view of Alger (Polymer Science Dictionary).
4. **Regarding claims 1 and 8:** Daichou teaches a lamp reflector (ti.), comprising a bulk molding compound ("BCM") which comprises unsaturated polyester, crosslinking agent, and glass fiber (par. 2). Example 2 teaches 14 parts polyester ("IPA/Man/PG" and "PMMA"), 10 parts crosslinking agent ("styrene"), 15 parts hollow glass spheres, and 45 parts inorganic filler ("calcium carbonate") (tbl. 1). Further, Daichou teaches that the pressure at which the hollow spheres will fail is 40 MPa (par. 42). The examiner calculates that the pressure resistance for the hollow glass spheres of the instant invention is $4,000 \cdot 10^4 \text{ N/m}^2$.

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5. Finally, Daichou teaches that crosslinker comprises styrene and diallyl phthalate but there is no mention of what amount of each is present in the composition (par. 29).

6. Therefore, applicants' attention is directed to Alger, which teaches:

"The monomer [, diallyl phthalate,] is sometimes used to replace styrene in the crosslinking of unsaturated polyester resins to give products with greater heat resistance."

7. Further, one of ordinary skill in the art would expect the crosslinking density to increase with diallyl phthalate compared to styrene owing to the number of unsaturated sites. Therefore, one has motivation to substitute part of the styrene crosslinking agent in Daichou with an amount of diallyl phthalate proportional to the amount of heat resistance and crosslinking density—which one of ordinary skill in the art would expect to contribute to hardness—gained. Therefore, it would have been obvious at the time of the invention for one of ordinary skill in the art to replace part of the styrene in Daichou with an amount appropriate to optimize the heat resistance and cross-linking density of the resultant crosslinked polyester.

8. **Regarding claim 4:** The calcium carbonate inorganic filler of example 2 has an average particle size of 6 microns (tbl. 1).

9. **Regarding claim 5:** The hollow glass spheres have a specific gravity of 0.6 (tbl. 1).

10. **Regarding claims 6-7 and 9:** The courts have stated that a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical or substantially identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655, (Fed. Cir. 1990). See also *In re Best*, 562 F.2d 1252, 195 USPQ 430, (CCPA 1977). "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established." Further, if

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it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

11. In light of the above, Daichou anticipates in the aforementioned claims.

Obviousness Rejection II

12. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Daichou *et alli* (US 2004/0085772 A1) in view of Alger (Polymer Science Dictionary) and Wada *et alli* (US 4,052,358).

13. **Regarding claim 3:** As discussed in paragraphs 4-7, Daichou in view of Alger render obvious a composition comprising unsaturated polyester and crosslinker, wherein the only limitation of said polyester is that it has a glass transition temperature of at least 150 °C (par. 29). Therefore, Daichou is open to using virtually any unsaturated polyester.

14. Wada teaches an unsaturated polyester resin that exhibits low-shrinkage, excellent colorability, workability, and storage stability, and is useful making bulk molding compounds (ti.; c. 5, ll. 3-42). From examples 2a-2d, one can extract the following formulation: 100 parts polybasic monomers, comprising 30-70 wt. % neopentyl glycol, 5-55 wt. % propylene glycol, and 10-30 wt. % hydrogenated bisphenol A; and 100 parts polyacidic monomers, comprising 100% maleic anhydride or fumaric acid.

15. Given the aforementioned benefits, one of ordinary skill in the art would have motivation to select Wada as the unsaturated polyester to use in Daichou. This combination of Wada in view of Daichou gives an unsaturated polyester composition whose formulation overlaps with the instant claims'. The claimed range would have been obvious to one having ordinary skill in the art at the

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time the invention was made, since it has been held that claiming an overlapping portion of the range taught in the prior is a *prima facie* case of obviousness. See *In re Malagari*, 182 USPQ 549 and MPEP 2144.05 (I). Therefore, it would have been obvious at the time of the invention for one of ordinary skill in the art to substitute Wada's polyester into Dacihou to enhance the physical properties of Daichou, thereby arriving at the instant claims.

Response to Arguments

16. Applicant's arguments filed 6/12/2009 have been fully considered but they are not persuasive.

17. Applicants argue the claimed invention has not been rendered obvious by the prior art because the relied upon secondary reference Alger only teaches styrene OR diallylphthalate as suitable crosslinkers and therefore one would not be motivated to include both styrene AND diallylphthalate. In response, while it is noted that Alger teaches diallylphthalate "is sometimes used to replace can replace styrene in crosslinking of unsaturated polyester resins" this in no way is a definitive statement that styrene and diallylphthalate can not be used in *combination*.

18. Furthermore, as previously discussed in paragraphs 5-7, the examiner has already set forth rational as to why one would be motivated to include **BOTH** styrene and diallylphthalate – modify the degree of branching in the final crosslinked polyester – which applicants have yet to address. Therefore, the rejection of claims 1 and 3-9 over the prior art is maintained.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin J Gillespie/
Examiner, Art Unit 1796

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/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796